Having thus described the preferred embodiment, the invention is now claimed to be:

1. An apparatus for guiding the movement of a surgical tool in relation to the anatomy of a patient, the apparatus comprising means for indicating the difference between the actual and desired position of the tool.

2. The apparatus of claim 1 wherein the tool is characterized by a tool reference frame and the difference is indicated with respect to the tool reference frame.

3. The apparatus of claim 2 wherein the means for indicating is mounted to the tool.

4. The apparatus of claim 1 wherein the means for indicating comprises at least one indicator, the indicator indicating a direction in which the tool should be moved to reach the desired position.

5. The apparatus of claim 4 wherein the at least one indicator provides an indication of the distance the tool should be moved to reach the desired position.

6. The apparatus of claim 5 wherein the at least one indicator is a light emitting diode.

7. The apparatus of claim 1 wherein the means for indicating comprises at least one indicator and further comprising means for determining the orientation of the at least one indicator in relation to the patient.

8. The apparatus of claim 7 wherein the at least one indicator is characterized by an indicator reference frame and the difference is indicated with respect to the indicator reference frame.

9. The apparatus of claim 8 wherein the at least one indicator is mounted to a patient support.

10. The apparatus of claim 1 further comprising

means for defining a desired position based on an image of the anatomy;

means for determining the actual position of the tool; and

means for determining the difference between the actual and desired positions.

11. The apparatus of claim 10 wherein the means for determining the actual position comprises one of an infrared localizer and an articulated arm.

12. The apparatus of claim 1 wherein the actual and a desired positions are at least one of a desired location, trajectory, depth, and rotation.

13. The apparatus of claim 1 wherein the means for indicating comprises a position indicator and a mode indicator.

14. The apparatus of claim 1 wherein the tool is a tool guide.

15. The apparatus of claim 1 wherein the tool comprises a pointing axis and the means for indicating comprises at least two indicators mounted in a plane substantially orthogonal to the pointing axis.

16. The apparatus of claim 1 wherein the means for indicating provides an audible indication.

17. An apparatus for guiding the movement of a surgical tool in relation to the anatomy of a patient, the apparatus comprising at least one position indicator, the at least one indicator indicating the direction in which the tool should be moved to reach a desired position.

18. The apparatus of claim 17 wherein the at least one indicator is mounted to the surgical tool and the direction is indicated with respect to the tool reference frame.

19. The apparatus of claim 17 wherein the at least one position indicator is characterized by an indicator reference frame and the direction is indicated with respect to the indicator reference frame.

20. The apparatus of claim 19 further comprising means for determining the relative orientations of the at least one indicator and the anatomy of the patient.

21. The apparatus of claim 17 further comprising a mode indicator.

22. The apparatus of claim 17 further comprising first and second position indicators arranged along a first line and third and fourth position indicators arranged along a second line, the first and second lines being perpendicular.

23. The apparatus of claim 17 wherein the position indicator comprises an LCD display.

24. An apparatus for guiding the movement of a surgical tool with respect to the anatomy of a patient, the apparatus comprising:

a surgical tool;

means for defining a desired position of the tool based on an image of the anatomy;

means for determining the actual position of the tool; and

means for determining the difference between the actual and desired positions;

at least one indicator mounted to the tool, the indicator providing an indication of the difference between the actual and desired positions.

25. A surgical tool comprising:

a plurality of infrared emitters mounted to the tool; and

at least one position indicator mounted to the tool.

26. A method for guiding the movement of a surgical tool with respect to the anatomy of a patient having a patient reference frame, the method comprising the steps of:

determining a desired position of the tool based on an image of the anatomy of a patient, the image having an image reference frame;

correlating the image and patient reference frames;

determining the actual position of the tool;

determining a direction the tool must be moved to reach the desired position; and

indicating the direction in which the tool must be moved to reach the desired position.

27. The method of claim 26 wherein the tool is characterized by a tool reference frame and wherein the direction is indicated in relation to the tool reference frame.

28. The method of claim 26 wherein the direction is indicated using at least one indicator and further comprising the steps of:

determining the relative orientations of the at least one indicator and the patient; and

compensating for changes in the relative orientation.

29. The method of claim 26 wherein the step of indicating the distance comprises the step of varying the one of the blink rate and color of an indicator visible to a user.

30. The method of claim 26 wherein the tool comprises at least one indicator for indicating a direction in which the tool must be moved to reach a desired location and at least one indicator for indicating a direction in which the tool must be moved to reach a desired orientation.

31. The method of claim 26 wherein the direction is indicated by a plurality of light emitting diodes mounted to the tool.

32. The method of claim 26 wherein the step of indicating utilizes at least one indicator having an indicator reference frame and the direction is indicated with respect to the indicator reference frame.

33. The method of claim 27 further comprising the steps of:

establishing a threshold;

determining the difference between the actual and desired positions; and

indicating that the tool must be moved only if the difference is greater than the threshold.

34. The method of claim 27 comprising the steps of:

selecting a mode;

indicating the selected mode; and

based on the selected mode, indicating the direction that the tool must be moved to reach one of a desired location and orientation.

35. The method of claim 27 further comprising the steps of:

determining the distance the tool must be moved to reach the desired position; and

providing a signal indicative of the distance the tool must be moved reach the desired position.